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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,162	03/02/2004	Ie-Hong Lin	020425	3768
23696	7590	10/20/2005	EXAMINER	
QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			NGUYEN, HUY D	
			ART UNIT	PAPER NUMBER
			2681	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/792,162

Applicant(s)

LIN, IE-HONG

Examiner

Huy D. Nguyen

Art Unit

2681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-25 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation "additional delays" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-6, 8, 10-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durrant et al. (US 2002/0155838 A1) in view of Reed et al. (U.S. Patent No. 6,275,707).

Regarding claims 1, 16, 20-21, 24, Durrant et al. teaches a method of performing position determination in a wireless communication network with repeaters, comprising: identifying a signal received by a wireless terminal as being from a repeater (see paragraphs [0012] and [0013]). Durrant et al. does not teach obtaining a position of the repeater; and providing the

position of the repeater as a position estimate for the terminal if a more accurate position estimate for the terminal cannot be obtained.

Reed et al. teaches a method and apparatus for assigning location estimates from a first transceiver of a plurality of wireless transceivers to a second transceiver based upon the received location estimate and calculated confidence level of the first transceiver (see column 3, line 66 – column 4, line 18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the method of Reed et al. to the teaching of Durrant et al. to allow the wireless network to operate efficiently without undue system overhead.

Regarding claims 2, 22-23, the combination of Durrant et al. and Reed et al. teaches the method of claim 1, further comprising: providing a position uncertainty for the repeater as an uncertainty in the position estimate for the terminal if the more accurate position estimate for the terminal cannot be obtained (see Reed et al.: column 3, lines 45-65).

Regarding claim 3, the combination of Durrant et al. and Reed et al. teaches the method of claim 1, wherein the more accurate position estimate for the terminal cannot be obtained due to lack of information for additional delays associated with the repeater (see Durrant et al.: abstract and paragraph [0045]).

Regarding claims 5-6, 17, the combination of Durrant et al. and Reed et al. teaches the method of claim 1, further comprising: determining whether the terminal is in an indoor or an outdoor environment; and providing the position of the repeater as the position estimate for the terminal if the terminal is deemed to be in an indoor environment (see Durrant et al.: paragraph [0042]).

Regarding claims 8, 18, 25, the combination of Durrant et al. and Reed et al. teaches the method of claim 1, further comprising: comparing received signal strength for the repeater against a threshold; and providing the position of the repeater as the position estimate for the terminal if the received signal strength exceeds the threshold (see Reed et al.: column 4, lines 54-67).

Regarding claims 10, 19, the combination of Durrant et al. and Reed et al. teaches the method of claim 1, wherein information for additional delays associated with the repeater is available, the method further comprising: processing a time measurement for the repeater to remove the additional delays associated with the repeater; and deriving the more accurate position estimate for the terminal based on the time measurement for the repeater, with the additional delays removed, and time measurements for at least two additional transmitters received by the terminal (see Durrant et al.: abstract and paragraph [0045]).

Regarding claims 11, 13-14, the combination of Durrant et al. and Reed et al. does not teach the method of claim 1, wherein the identifying is based on a pseudo-random number (PN) sequence used for the signal received from the repeater. However, it would have been an obvious matter of design choice to identify signal received from the repeater based on a pseudo-random number (PN) sequence since the invention would perform equally well with identifying signal received from the repeater based on a pseudo-random number (PN) sequence.

Regarding claim 12, the combination of Durrant et al. and Reed et al. teaches the method of claim 1, wherein the identifying is based on modulation characteristics of the signal received from the repeater (see Durrant et al.: paragraph [0013]).

Regarding claim 15, the combination of Durrant et al. and Reed et al. teaches the method of claim 1, wherein the wireless communication network is a CDMA network (see Durrant et al.: paragraph [0051]).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Durrant et al. (US 2002/0155838 A1) in view of Reed et al. (U.S. Patent No. 6,275,707) and in further view of Robert (U.S. Patent No. 6,169,497).

Regarding claim 4, the combination of Durrant et al. and Reed et al. does not teach the method of claim 1, wherein the more accurate position estimate for the terminal cannot be obtained due to lack of a required number of measurements to perform trilateration for the terminal.

However, the preceding limitation is taught in Robert (see column 13, lines 48-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of Robert to the teaching of Durrant et al. in view of Reed et al. to determine location of an object in case there lacks fixed positioning reference for participating in the triangulation.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Durrant et al. (US 2002/0155838 A1) in view of Reed et al. (U.S. Patent No. 6,275,707) and in further view of Suprunov (US 2002/0005804 A1).

Regarding claim 9, the combination of Durrant et al. and Reed et al. does not teach the method of claim 8, wherein the threshold is set based on an expected received signal strength for the repeater at a particular range from the repeater.

However, the preceding limitation is taught in Suprunov (see paragraph [0021]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of Suprunov to the teaching of Durrant et al. and Reed et al. to obtain a method of locating wireless callers when they seek emergency assistance without significantly modifying the existing cellular network software and topology.

Allowable Subject Matter

7. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 7, the closest prior arts, Durrant et al. (US 2002/0155838 A1), Reed et al. (U.S. Patent No. 6,275,707), and Robert (U.S. Patent No. 6,169,497), either singularly or in combination, fail to teach the method of claim 5, wherein the determining is based on the number of signals received by the terminal from satellites and base stations.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy D. Nguyen whose telephone number is 571-272-7845. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2681

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Huy Nguyen


JOSEPH FEILD
SUPERVISORY PATENT EXAMINER